GPG/HIT Catalyst: Request for Information

U.S. General Services Administration | Public Buildings Service | Green Proving Ground Program
U.S. Department of Energy | Office of Energy Efficiency & Renewable Energy | High Impact Technology Catalyst

GSA | GPG Green Proving Ground Program | U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

AGENDA

- Overview
- What is the GPG program?
- What is the HIT Catalyst?
- What is the RFI looking for?
- What does it mean to participate?
- How to complete the RFI
- Q&A

TODAY'S PRESENTERS

Christine Wu
Program Manager, GSA
Green Proving Ground

Kevin Powell
Program Director, GSA
Green Proving Ground

Amy Jiron
Program Manager, DOE
HIT Catalyst

GPG/HIT CATALYST: Request for Information

Innovative pre- & early-commercial building technologies that improve environmental performance.

Technologies will be considered for GSA's Green Proving Ground (GPG) program, DOE's High Impact Technology (HIT) Catalyst program, or both.

Technology categories:

- Energy management and energy management information systems
- Window attachments
- Fans and blowers
- Renewable energy
- Water conservation and reuse

Selected technologies will undergo objective measurement & verification in real-world, operating buildings.

WHY A JOINT RELEASE?

Leverage GSA and DOE resources to:

- develop objective information about performance of underutilized technologies
- accelerate adoption of building technologies that cost-effectively reduce national energy consumption
- benefit manufacturers—one submission, two programs, larger portfolio

Policy Alignment:

- DOE-GSA Interagency Memorandum of Understanding (2015)
- EISA 2007 Section 421(e)

GSA'S GREEN PROVING GROUND PROGRAM

GSA: “THE GOVERNMENT’S LANDLORD”

- 8,721 assets
  - Owned: 1,574 assets
- 377M square feet
  - Owned: 183M ft^2
- $380M annual energy costs
- 1.1 million federal employees

At 52.4 kBTU/sf/yr, GSA buildings are 44% more efficient than typical U.S. commercial buildings.

FEDERAL MANDATES SET THE PACE

Energy Independence and Security Act, 2007

30% reduction in energy use intensity (EUI) by 2015, over 2003 levels

GSA Response:

-32.0% EUI reduction as of July 2015

Executive Order 13693, 2015

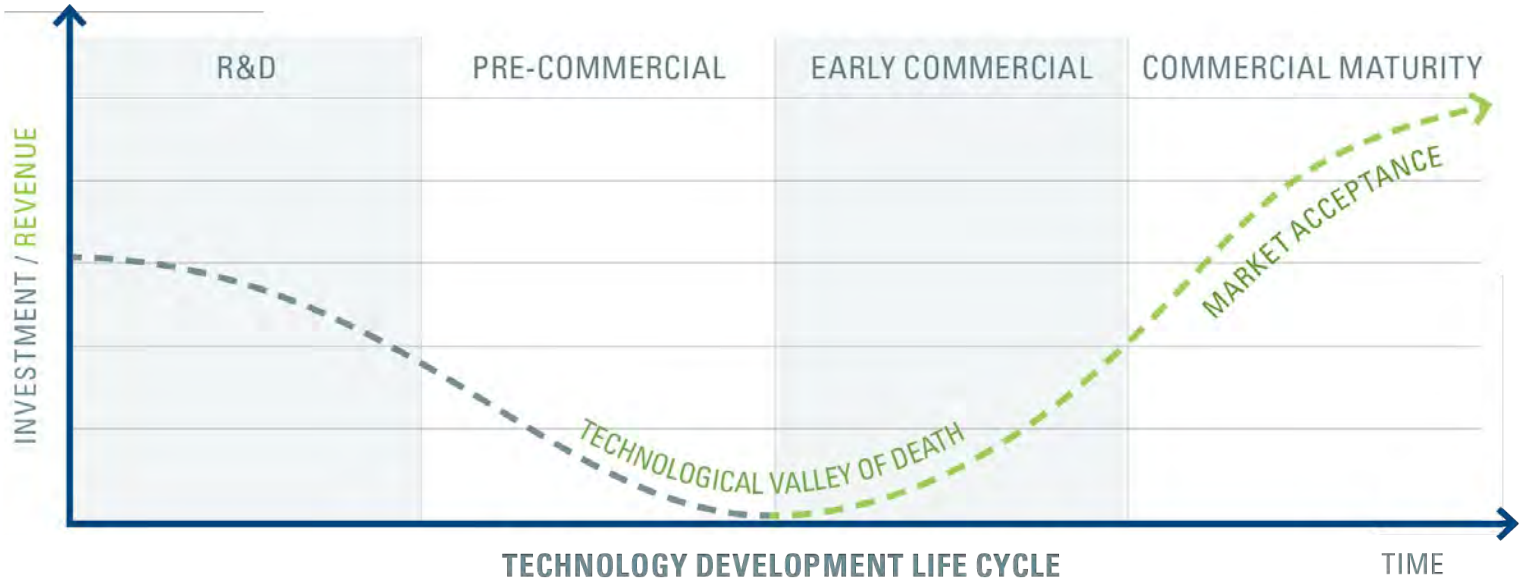
25% reduction in EUI through 2025 (2.5% annual), over 2015 levels

Efficiency results from innovation and policy

Innovative building technologies are critical for GSA to meet its sustainability goals.

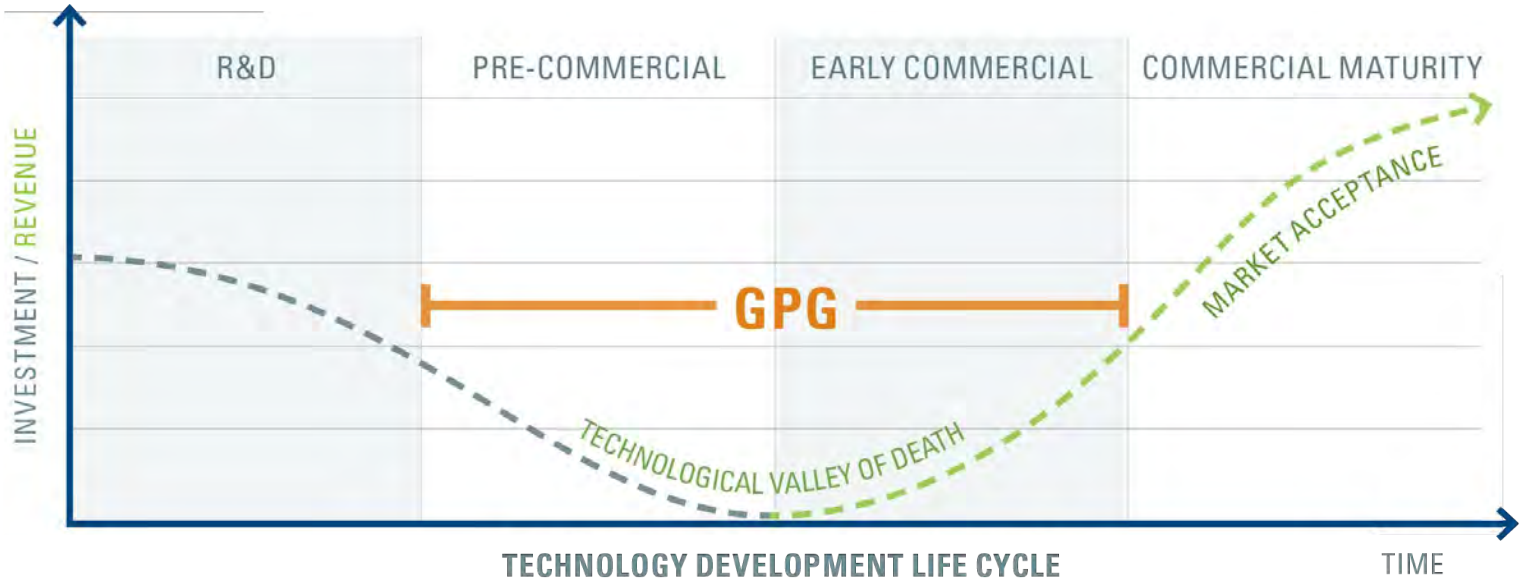
INNOVATION REQUIRES SUPPORT

4 out of 5 technologies fail to cross the Technological Valley of Death and achieve market acceptance because of the financial and operational risks they pose to early adopters.



GPG SUPPORTS DEVELOPMENT OF INNOVATIVE TECHS

GPG assumes first-use risk and accelerates market acceptance by objectively assessing innovative sustainable building technologies in real-world environments.



GREEN PROVING GROUND, 2011-2015

Received	560	technology applications
Selected	48	technologies for M&V
Published	24	DOE laboratory assessments
Identified	14*	broad deployment potential

* Within GSA portfolio.

Google Ranking

GPG Technology Findings consistently appear within the top 5 Google search results

DOE'S HIGH IMPACT TECHNOLOGY CATALYST

HIT CATALYST: Overview

- Program goals
  - Identify and prioritize underutilized, energy-efficient technologies
  - Conduct market-facing deployment activities
- Scope: All commercial buildings in the U.S.
  - HITs deployed via the Better Buildings Alliance (BBA), federal leaders, regional non-profits and efficiency organizations
  - HIT Catalyst facilitates matchmaking with commercial and federal partners
- Strategy
  - 4-Step Solution, the HIT Catalyst Playbook
  - Handoff to further downstream partners including codes/standards, REEOs, and utility programs

HIT CATALYST: 4-Step Playbook

Owners demonstrate interest in high impact technologies but…	A 4-step solution – The HIT Catalyst Playbook
…the cost is too high →	1. **INNOVATION CHALLENGE** to increase competition
…they are uncertain about real world performance →	2. **TECHNOLOGY DEMO** to validate performance
…there are too many barriers →	3. **RESOURCE DEVELOPMENT** to support adoption
…they are waiting until the broader market adopts →	4. **ADOPTION CAMPAIGN** to lock in savings

HIT CATALYST PLAYBOOK: 1. Innovation Challenge

2010: DOE and commercial building owners issued a challenge for more efficient rooftop HVAC units (RTUs)

RESULT: 25% increase in high-efficiency RTU models on the market from 2010 to 2014.

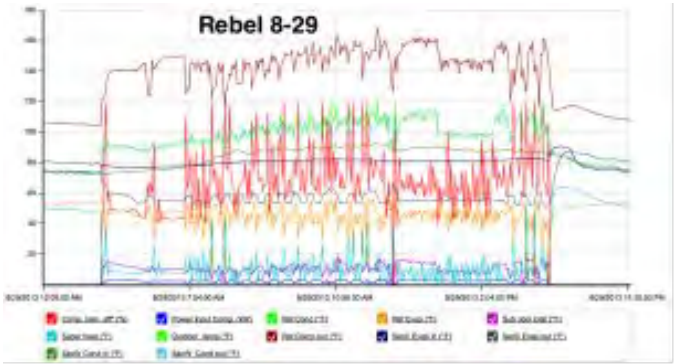
First manufacturers to meet the challenge:

HIT CATALYST PLAYBOOK: 2. Technology Demonstration

Demonstration Unit

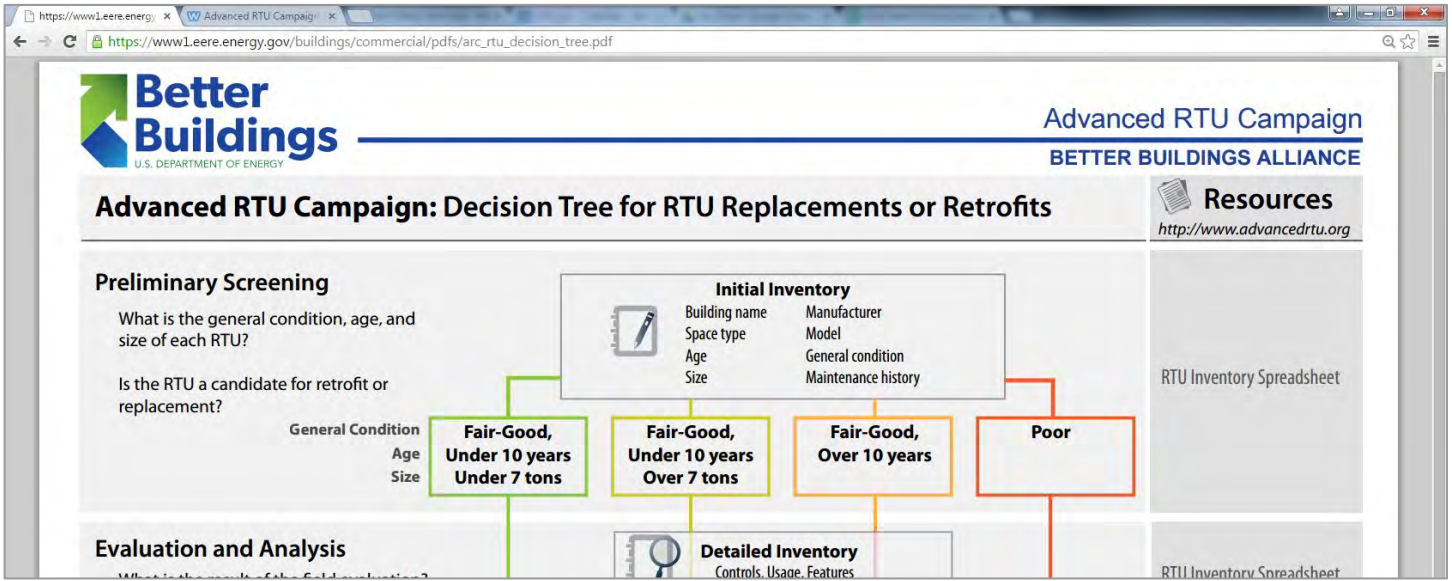
Baseline Unit

2013-2015: DOE demonstrated the RTU Challenge spec through 15 technology demonstrations, with 19 commercial building host site partners



HIT CATALYST PLAYBOOK: 3. Resource Development

2014-2015: HIT supported the development of 5 case studies and guidance documents to disseminate information and resources to enable adoption by partners.



http://www.advancedrtu.org/

HIT CATALYST PLAYBOOK: 4. Adoption Campaign

- **2014**: Phase 1, Joint DOE/Industry recognition campaign & guidance
  - 200 partners with 43,000 RTUs retrofitted or replaced
  - Savings — 386 million kWh, 4 TBTU/year source, and 356 million pounds of CO_2
- **Current**: Phase 2
  - 10 award categories for RTU projects
  - Announcements and recognition at the Better Buildings Summit

ASHRAE

RILA
RETAIL INDUSTRY LEADERS ASSOCIATION
Educate. Innovate. Advocate.

FEMP
Federal Energy Management Program

Better Buildings
U.S. DEPARTMENT OF ENERGY

GPG/HIT CATALYST: Joint Request for Information

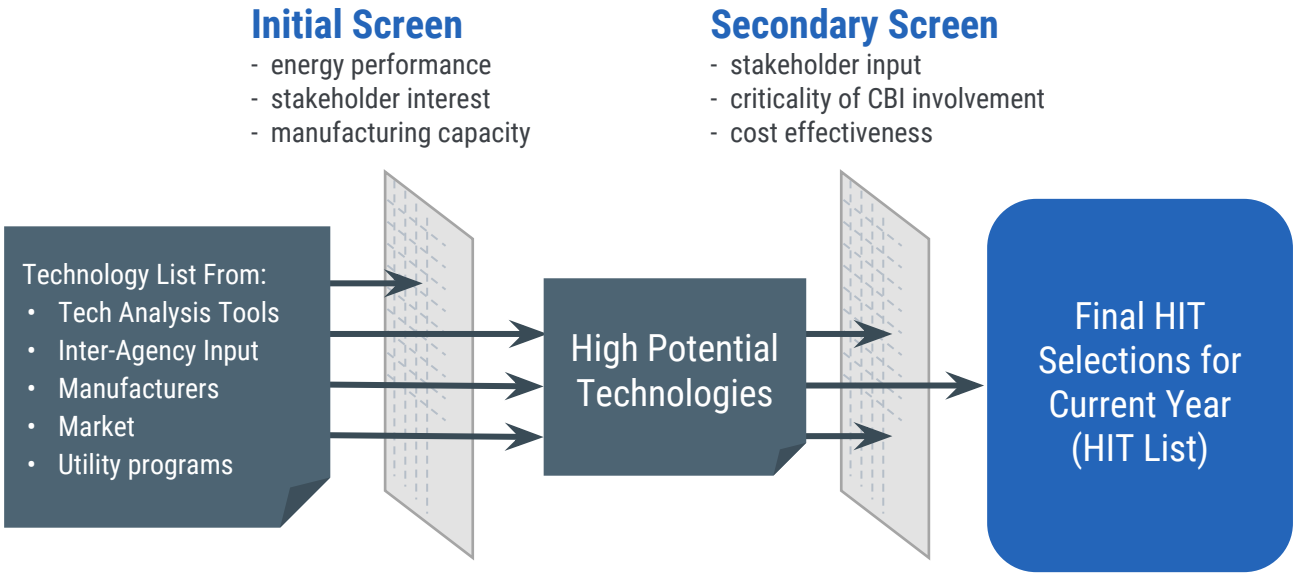
FEDERAL PROGRAMS: What is the goal?

Accelerate adoption of sustainable technologies and advance the market

Identify need for **market stimulation** → **Match** technologies, sites, and National Laboratories → **Real world demonstration** → Demonstration generates **performance data and market information** → Cultivate path to market through **dissemination of information and resources** to enable adoption

Prioritizing Technology Selection

HITs selected from over 400 measures through a multi-step, collaborative screening process driven by expert input.



RFI: What Are We Looking For?

Technology Categories:

- Energy management and energy management information systems
- Window attachments
- Fans and blowers
- Renewable energy
- Water conservation and reuse

Technology Maturity:

- Pre- and early commercial but market-ready
- Emerging and underutilized

Factors considered in the RFI:

1. Innovation
2. Performance
3. Deployment Potential
4. Costs/Savings
5. Project Value
6. Technical Risk

RFI: Potential Host Sites

HIT Catalyst:

- All commercial buildings in the U.S., including privately-owned buildings, federal buildings outside of GSA's jurisdiction, and institutional buildings

Green Proving Ground:

- Federally-owned buildings in GSA's portfolio
- Large urban buildings with central plant
  - 90% buildings > 100,000 ft^2, 80% portfolio energy spend: buildings > 200,000 ft^2
- Majority in mild climate zone
  - > 80% in ASHRAE climate zones 3, 4, 5
- Energy efficient: Majority Energy Star 80 or better

Successful technologies:

1. Reduce energy or water use
2. Decrease reliance on non-renewable energies
3. Decrease operational costs
4. Improve tenant satisfaction
5. Have the potential to transform markets through broad deployment

PROGRAM PARTICIPATION: Potential Benefits

- Increase market acceptance
- Accelerate deployment & development of sustainable building technologies
- Contribute to reduction of national energy consumption
- Follow-on actions for technologies with broad deployment potential may include:
  - Engagement of GSA property managers and commercial portfolio managers
  - Support for participation in GSA Schedules
  - Engagement with ESCOs
  - Incorporation of evaluation findings into performance specifications
  - Streamlined entry for utility incentives and rebate programs

PROGRAM PARTICIPATION: Your Contribution

Technology

- GPG—Technology must be gifted to the U.S. government
- HIT—Demonstration project details will be negotiated between vendor and host site partner

Time and Travel

- Provide input to labs on site selection, test bed design, project plan, and evaluation report
- Provide guidance on installation, commissioning, and tenant engagement
- Travel to 1 - 3 on-site meetings

Neither GSA nor DOE will provide funding to participants in either program

ROLES AND RESPONSIBILITIES

Federal Program

- Overall project management
- Support site selection
- Coordinate and fund M&V
- Lead report review and publication
- *GPG only: Fund tech installation*

Host Site

- Oversee all contracting
- Manage technology installation
- Facilitate tenant engagement
- Provide user feedback

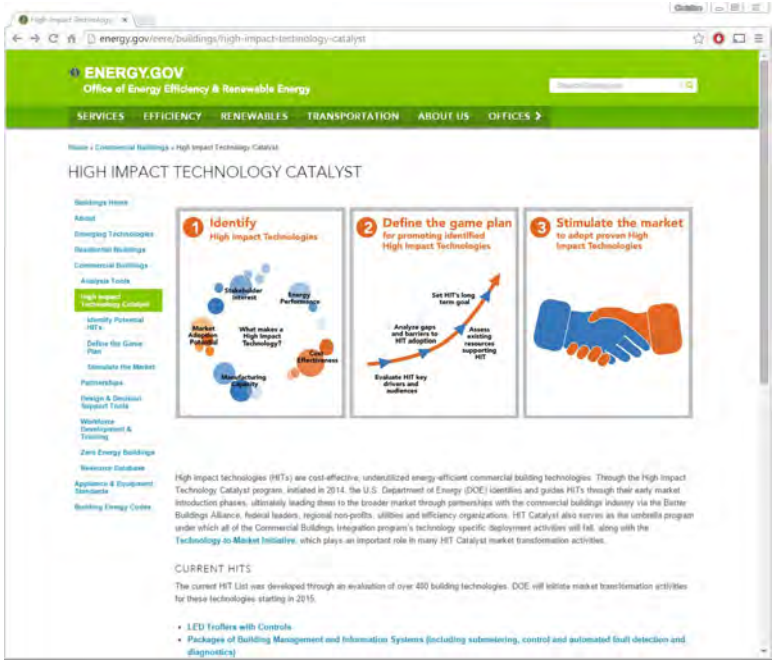
National Lab

- Design project plan
- Collect and analyze data
- Author technical report

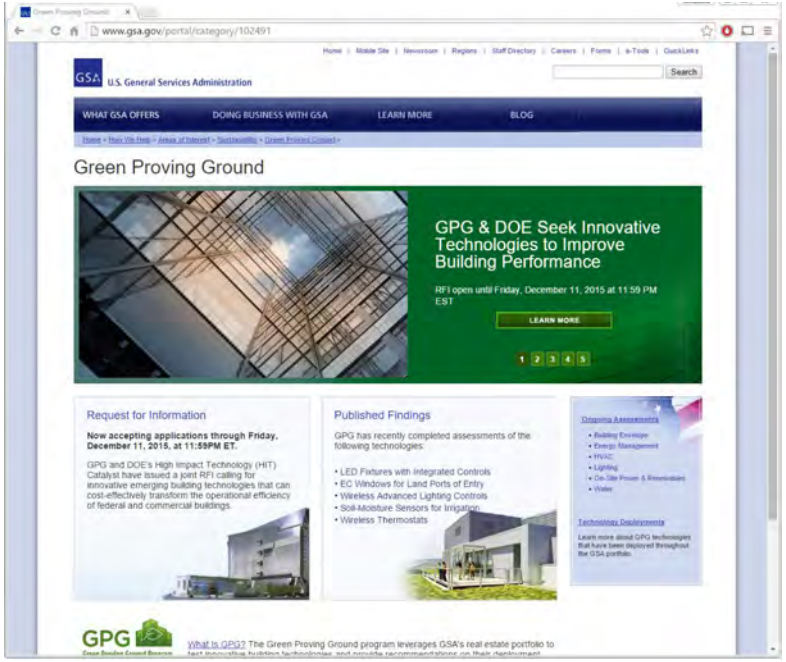
Tech Vendor

- Provide technology
- Support design, installation and commissioning

RFI: How to Apply

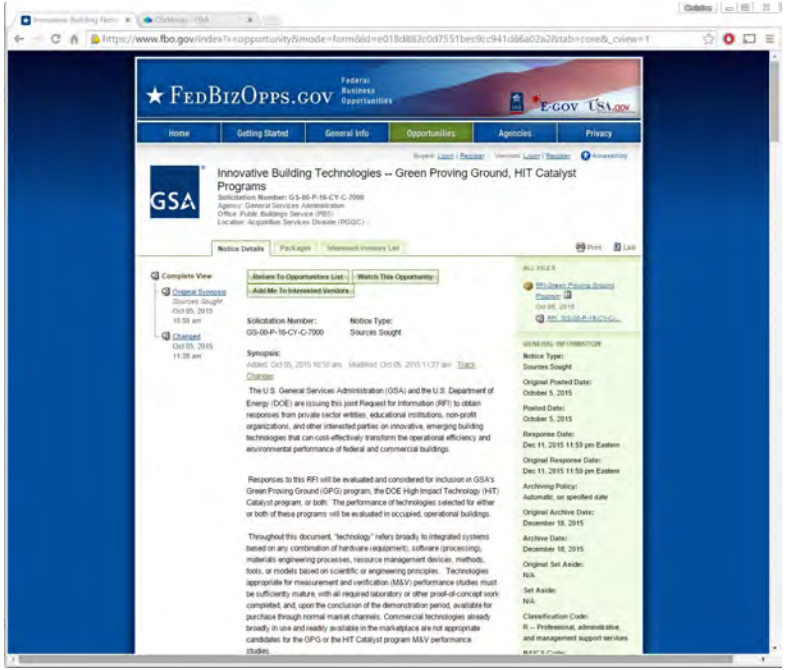


buildings.energy.gov/hitcatalyst



gsa.gov/gpg

RFI: How to Apply



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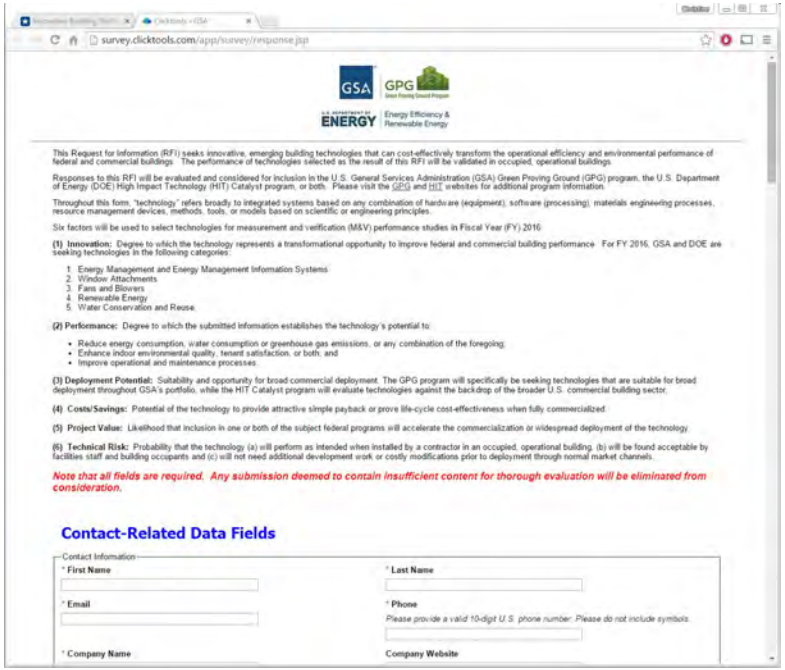

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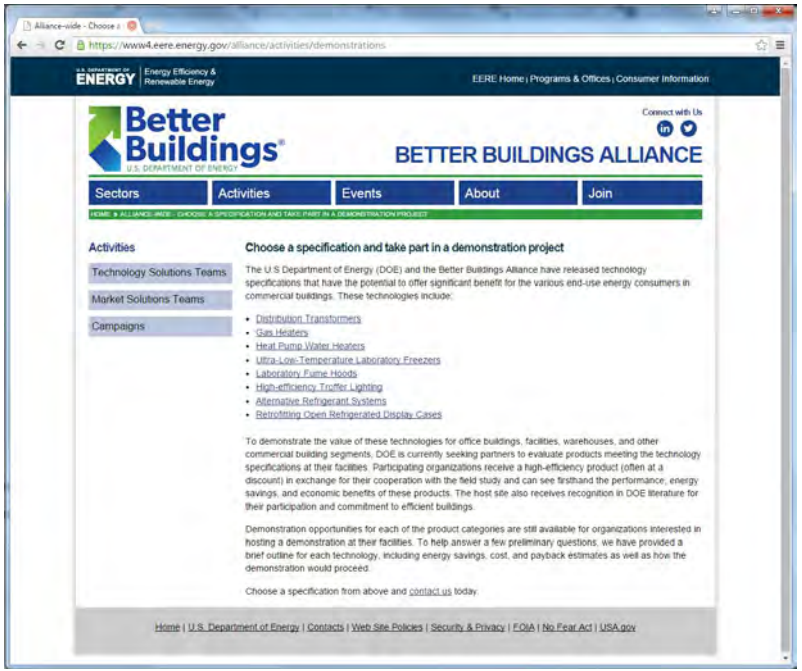
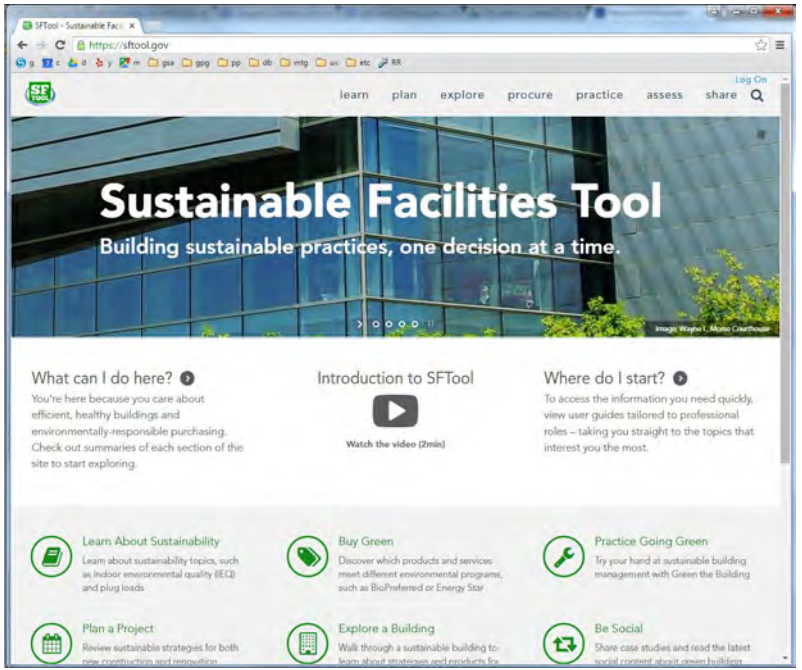
Additional Resources



https://www4.eere.energy.gov/alliance/activities/demonstrations



http://sftool.gov

Questions?

gpg+2016@gsa.gov
gsa.gov/gpg
buildings.energy.gov/hitcatalyst

Applications due by Friday, December 11, 11:59 PM EST

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